

CLAIMS

- 1 1. An intermediate network device having a plurality of ports for sending and re-
2 ceiving network messages to and from one or more entities of a computer network at
3 least some of which are segregated into a plurality of virtual local area network (VLANs)
4 defined within the computer network, the intermediate network device comprising:
5 a compact-Generic Application Registration Protocol (GARP) VLAN Registr-
6 ation Protocol (GVRP) application component associated with a selected port, the com-
7 pact-GVRP application component having:
8 a GARP Information Declaration (GID) component configured to main-
9 tain VLAN registration state for the selected port in response to receiving attribute
10 events for the VLANs;
11 a compact-GVRP encoder/decoder unit; and
12 a GVRP PDU message generator, wherein
13 the compact-GVRP encoder/decoder unit is configured to compute an encoded
14 value, in accordance with an encoding algorithm, for the attribute events associated with
15 a given set of VLANs, and
16 the GVRP PDU message generator loads the encoded values computed for all of
17 the VLANs defined within the computer network within a single GVRP PDU message
18 for transmission from the selected port.